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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,039

03/11/2004

Barton A. Thomson

8221

4960

67886 7590 07/31/2007
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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1742

MAIL DATE

DELIVERY MODE

07/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/798,039

Applicant(s)

THOMSON ET AL.

Examiner

Deborah Yee

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18, and 21 to 25 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5-31-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 19 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 9, 2006.

Claim Objections

2. Claim 18 is objected to because of the following informalities: Step (e) of Claim 18 recites holding the rough-reduce product at a temperature above the recrystallization stop temperature and above the precipitation temperature of the microalloy at about 1020C to about 1150C yet claim 9 recites the microalloy precipitation temperature to be about 1050C. Hence a lower limit of 1020C as recited by claim 18 would be below its precipitation temperature of 1050C. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 8 and 10 to 18 and 21 to 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornelissen et al (US Patent 6, 280,542) alone in view of Crowther et al. publication submitted by applicant in IDS dated March 10, 2005.

Response to Arguments

5. Applicant's arguments filed May 31, 2007 have been fully considered but they are not persuasive.

6. It was submitted that there is no teaching or suggestion anywhere in the Cornelissen et al. patent that the method and apparatus disclosed therein are applicable to high strength, low alloy steel containing a hardness-promoting microalloy comprised of V and N, as recited by amended claim 1. It is the examiner's position that Cornelissen on lines 10 to 23 in column 6 discloses producing a flat-rolled steel product having high strength and formability for automotive application similar to applicant and can be made from high strength steels including dual-phase steels and TRIP steels, in general, which would broadly include a micro-alloy steel containing V and N as recited by claim 1. Moreover, it is well known in the art to conduct thin slab direct rolling process with V micro-alloyed steels as shown in Crowther publication; and hence would be obvious to incorporate such steel to thin slab direct rolling processes known in the art, such as that taught by Cornelissen.

7. Applicant stated that Cornelissen teaches that "the strip leaving the roughing apparatus is heated to or held at a temperature in the austenitic range (col.2, lines 6-7), and that it "is rolled in the finishing apparatus essentially in the austenitic range" (col.2, lines 7-9). The "austenitic range" is defined by Cornelissen, however, appears to be in the range of 850 – 910C depending on the carbon content (col.4, lines 40-45) or possibly 850-920C (col. 4, line 47). Applicant also refers to figures 1 and 2 of Cornelissen wherein the process comprises entering the rough reduction at 1050C and

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exiting at 950C and conducting a final reduction step in the second rolling apparatus by entering and exiting at a temperature of 900C. Thus, many of the steps of the Cornelissen et al. process are conducted below the present invention temperature range of 1050 to 1200C.

8. It is the examiner's position that prior art process does not patentably distinguish over prior art since the numerical temperature range of 1050 to 1200C is not actively recited in applicant's claims as the temperature which is above a recrystallization stop temperature of the austenite and above a precipitation temperature of the microalloy.

9. In regard to claim 12, n-value property would be expected in prior art since process of making is substantially the same.

10. Moreover, Cornelissen on lines 60 to 67 in column 11 discloses the rough-reduce product can be stored and homogenized in coil-boxes and if an extra temperature increase is needed, it is heated in the heating apparatus. Cornellissen on lines 60 to 64 in column 4 teaches the homogenization temperature to be between 1050 and 1200C, which overlaps with 1020 to 1150C recited by claim 18. Moreover, homogenizing in the austenitic phase is equivalent to recrystallization of austenite, and the time and fine grain size recited in claim 17 would be a matter of choice well within the skill of the artisan.

11. In regard to newly submitted claims 21 to 22, prior art in figure 2 teaches maintaining as-cast steel product at 1105C (within claimed range of 1050 to 1200C) and enters the first rolling apparatus at 1050 (within the claimed range of 1050 to 1200C).

12. Moreover, the prior art steel enters the second rolling apparatus at substantially the same temperature wherein austenite is recrystallized in step (e) and exits at 900C (within the claimed range of 820 to 950C). Note that the term "substantially" is equivalent to 50% or more.

Allowable Subject Matter

13. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not teach or fairly suggest a process for producing a flat rolled steel product, as recited by claim 9, wherein the microalloy precipitation temperature is about 1050C and step (d) requires the rough reduction step having an exiting temperature above the precipitation temperature of the microalloy at 1050C, and step (e) requires holding the rough-reduced product at a temperature above the precipitation temperature of the microalloy at 1050C, and step (g) requires conducting a final reduction step wherein entering temperature is above the precipitation temperature of the microalloy at 1050C. As pointed out in applicant's remarks dated May 31, 2007, many of the steps of the Cornellsen process are conducted below 1050C as shown in prior art Figure 2 wherein the rough reduction step has an exiting temperature of 950C and the final reduction step has an entering temperature at 900C.

Conclusion

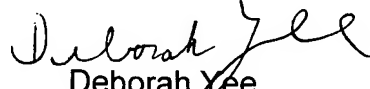
15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Deborah Yee
Primary Examiner
Art Unit 1742

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